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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,753	09/18/2006	Alfred Haas	975902600154	8371
24325 7590 10/03/2008				
PATENT GROUP 2N				
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EXAMINER				
YOUNG, NATASHA E				
ART UNIT		PAPER NUMBER		
1797				
MAIL DATE		DELIVERY MODE		
10/03/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/583,753

**Applicant(s)**

HAAS ET AL.

**Examiner**

NATASHA YOUNG

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 56-90, 102-106, 113-120 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 56-90 and 102-106 is/are allowed.
- 6) ☒ Claim(s) 113-115 and 117-120 is/are rejected.
- 7) ☒ Claim(s) 120 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 113 and 115-120 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bergh et al (US 7,118,917 B2) in view of Karlsson et al (US 7,256,044 B2).

Regarding claim 113, Bergh et al discloses a device for the processing or testing of at least one chemical reaction, comprising: a unit (600) for the controlled discharge of product fluid out of a unit that may have application in separation systems (see column 2, line 14 through column 3, line 2 and column 13, line 27 through column 14, line 6) such that it would have been obvious to one having ordinary skill in the art to use the units (600) as separator in order to separate out an unwanted product.

Bergh et al does not disclose a unit for the controlled discharge of product fluid out of at least one high pressure end fluid separation unit, wherein said fluid separation unit is in fluid connection, via a discharge valve, with a collecting area that is at a lower pressure than the high pressure fluid separation unit.

However, Bergh et al discloses a set of restrictors (520) and an outlet (discharge) distribution subsystem (501) (see column 13, line 27 through column 14, line 6).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the fluid separation unit having a discharge valve, since it was known in the art that discharge valves control the flow from a pipe or tank (see MPEP 2144.03 (A-E)).

Karlsson et al discloses an apparatus for combinatorial generation of a plurality of effluents, a feed fluid is contacted simultaneously with a plurality of solids where each of the solids is housed in an individual vessel, (see column 3, lines 29-52); and

restrictors (18) and the pressure in lines (16) between gas splitting devices (12) and restrictors (18) is near the reaction pressure and between restrictors (18) and sampling valve (20) is at a reduced pressure as compared to the pressure in lines (16) and preferably close to atmospheric pressure (see column 7, lines 47-67). The sample valve is interpreted as a collecting area.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Bergh et al with the teachings of Karlsson et al such that there is a unit for the controlled discharge of product fluid out of at least one high pressure end fluid unit separation unit, wherein said fluid separation unit is in fluid connection, via a discharge valve, with a collecting area that is at a lower pressure than the high pressure fluid separation unit in order to control the flow of discharge through variations in pressure.

Regarding claim 114, Bergh et al does not disclose a device wherein at least two reactions run in parallel and that at least two fluid separation units, either on the high or at the low pressure end, or both, are connected in parallel.

However, Bergh et al discloses the parallel microreactor may be used in other chemical processing systems (e.g. mixing systems, separation systems, material-processing systems, etc.) (see column 2, lines 21-29).

It would have been obvious to choose to have at least two reactions run in parallel and that at least two fluid separation units, either on the high or at the low pressure end, or both, are connected in parallel from a finite number of identified, predictable solutions for ways of running two chemical processes in parallel, i.e., it

would have been "obvious to try" the specific structure of at least two reactions run in parallel and that at least two fluid separation units, either on the high or at the low pressure end, or both, are connected in parallel to evaluate more than one chemical process at a time.

Regarding claim 115, Bergh et al does not disclose a device wherein a discharge valve is positioned at the bottom side of at least one fluid separation unit on the high pressure end.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a discharge valve is positioned at the bottom side of at least one fluid separation unit on the high pressure end, since it has been held that rearranging parts of an invention involves only routine skill in the art (see MPEP 2144.04 (VI-C)).

Regarding claim 117, Bergh et al does not disclose a device wherein at least one fluid separation unit contains a fluid level sensor.

However, Bergh et al discloses the reaction system can further comprise a detection system integral or separate from the reaction system, for evaluating the reactions, for example, by detecting one or more reaction products or unreacted reactants in the effluent streams of the four or more reactors (see column 2, line 46 through column 3, line 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have at least one fluid separation unit contains a fluid level sensor, since it was known in the art that fluid level sensors determine the level of fluid

in a reactor which may be used to improve evaluation of the reaction by determining the total fluid in the reactor to compare with the reaction products or unreacted reactants (see MPEP 2144.03 (A-E)).

Regarding claim 118, Bergh et al discloses a device containing means for regulating pressure or fluid flow or both (510, 520), which are restrictors (see column 13, line 27 through column 14, line 6).

Regarding claim 119, Bergh et al discloses a device which contains means for regulating pressure or fluid flow or both (510, 520), which are restrictors (see column 13, line 27 through column 14, line 6) and the thermal control system is preferably an integral system--having structural and/or control features that are common to each of the four or more reactors (e.g., common forced-convection heat-exchange system or common control software or common microprocessor) (see column 11, lines 14-54).

Bergh et al does not disclose a device wherein a discharge valve is positioned at the bottom side of at least one fluid separation unit on the high pressure end, at least one fluid separation unit contains a fluid level sensor, the device which contains means for regulating pressure or fluid flow or both, and the discharge valve, the fluid level sensor and the means for regulating pressure or fluid flow are connected to a computer-based control unit.

However, Bergh et al discloses the reaction system can further comprise a detection system integral or separate from the reaction system, for evaluating the reactions, for example, by detecting one or more reaction products or unreacted

reactants in the effluent streams of the four or more reactors (see column 2, line 46 through column 3, line 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have at least one fluid separation unit contains a fluid level sensor, since it was known in the art that fluid level sensors determine the level of fluid in a reactor which may be used to improve evaluation of the reaction by determining the total fluid in the reactor to compare wit the reaction products or unreacted reactants (see MPEP 2144.03 (A-E)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a discharge valve is positioned at the bottom side of at least one fluid separation unit on the high pressure end, since it has been held that rearranging parts of an invention involves only routine skill in the art (see MPEP 2144.04 (VI-C)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to regulate the pressure of the discharge valve, since it has been held that the provision of adjustability (regulating pressure), where needed, involves routine skill in the art (see MPEP 2144 (V-D)).

It would have been obvious to choose to the means for regulating pressure or fluid flow are connected to a computer-based control unit from a finite number of identified, predictable solutions for ways of running two chemical processes in parallel, i.e., it would have been "obvious to try" the specific structure of the means for regulating pressure or fluid flow are connected to enhance control of the parallel reactor system\.



Regarding claim 120, Bergh et al discloses a device wherein at least one high pressure end fluid separation unit is suited for accommodating product fluid having a volume ranging from 0.1 ml to 140 ml (see column 2, line 46 through column 3, line 2).

***Allowable Subject Matter***

Claims 56-90 and 102-106 are allowed.

Regarding claims 56 and 72, the prior art references do not disclose or suggest the limitation of on the reaction space output side, and downstream of the connection to the holding gas feed according to (d) in the product flow direction, at least one restrictor per reaction space.

Regarding claim 102, the prior art references do not disclose or suggest the limitation of after the nodes according to (e'''), at least one restrictor per connection according to (e'').

Claim 116 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art references do not disclose or suggest a device wherein the collecting area for the product fluid is a fluid separation unit located at the low pressure end with respect to the high pressure end fluid separation unit.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See Guan et al (US 6,149,882), Srinivasan et al (US

2002/0014106 A1), Brenner et al (US 6,537,500 B1), Peterson (US 3,207,214), Nishimura et al (EP 1 167 298 A1), and Scaccia (EP 0 168 301 A).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATASHA YOUNG whose telephone number is (571)270-3163. The examiner can normally be reached on Mon-Thurs 7:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NY/

/Walter D. Griffin/  
Supervisory Patent Examiner, Art Unit 1797